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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/519,330	03/06/2000	Radislav Alexandrovich Potyrailo	RD-27,768	8826

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EXAMINER
COLE, MONIQUE T

ART UNIT	PAPER NUMBER
1743	6

DATE MAILED: 04/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-6

Office Action Summary	Application No. 09/519,330	Applicant(s) POTYRAILO ET AL.	
	Examiner Monique T. Cole	Art Unit 1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 March 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) *22-36* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2,3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I in Paper No. 5 is acknowledged. The traversal is on the ground(s) that all present claims deal with a single invention. This is not found persuasive because the apparatus claims contain elements that are not required in the process claims.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 14 recites the limitation "said inert carrier gas". There is insufficient antecedent basis for this limitation in the claim. It appears that Applicant may have intended for this claim to depend from claim 13. Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 12, 16, 17, 18, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by USP 4,818,348 to Stetter (herein referred to as "Stetter '348"). Stetter '348 teaches a method of detecting, identifying, quantifying and monitoring gas or liquids. The sample is fed into a vapor generator (volatilizer), at which point it comes

into contact with a sensor. The sensor provides output to a computer that tabulates the information provided by the sensor. The sensor array may comprise electrochemical or semi-conductor type sensors, and may comprise optical or piezoelectric devices. The sensor of Stetter '348 is not substantially sorbent, as it facilitates compounds passing through the one or more filters. The method further comprises a conversion means where characteristics such as flow rate (function of time) is measured. Subsequent to identification, the sensor signal can be used to quantify the compound of interest by selection of an appropriate calibration constant stored in the memory of the device (frequency counter). Thus, applicant's claimed invention is deemed to be anticipated, within the meaning of 35 USC 103, over Stetter '348.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 6 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stetter '348 in view of 5,733,902 to Vig (herein referred to as "Vig '902").

Stetter '348 fails to teach that the sensor element is a quartz crystal. Stetter '348, does, however, teach that the sensor may be piezoelectric.

Vig '902 teaches that piezoelectric sensors may be made of materials other than quartz. It can be inferred from this statement that piezoelectric sensors are conventionally made from quartz crystals. See pg. 6 of 12, lines 8-9. Thus, it would have been obvious to one of ordinary skill in the art to use a quartz crystal as the piezoelectric element in Stetter '348.

6. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stetter '348 in view of USP 5,233,194 to Mauze et al. (herein referred to as "Mauze et al.'194").

Stetter '348 fails to teach that the sensor element is coated with a random copolymer of tetrafluoroethylene and perfluoro-2,2-dimethyl-1,3-dioxole.

Mauze et al.'194 teach a gas sensor coated with TEFLON AF (a copolymer of tetrafluoroethylene and perfluoro-2,2-dimethyl-1,3-dioxole). See col. 6, lines 49-53. The coated sensor is taught to have the advantages of reduced complexity and cost, and it is more rugged, lightweight and compact. See col. 2, lines 11-15. Thus, given the numerous advantages of the coated sensor taught by Mauze et al.'194, it would have been obvious to one of ordinary skill in the art to modify the sensor of Stetter '348 by coating the sensor with a copolymer of tetrafluoroethylene and perfluoro-2,2-dimethyl-1,3-dioxole. Therefore, for the reasons set forth above, Applicant's claimed

invention is deemed to be obvious, within the meaning of 35 USC 103, over Stetter '348 in view of Mauze et al. '194.

7. Claims 13, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stetter '348 in view of USP 5,719,323 to Ellzy (herein referred to as "Ellzy '323").

Stetter '348 fails to teach that the sample volume is carried through the vapor delivery line by an inert carrier gas.

Ellzy '323 teach a method of determining the composition of a gaseous mixture in a vaporizer that comprises mixing the sample volume with a carrier gas. See col. 1, lines 50-55. The method is taught to have the advantage of controlling the flow rate of the sample material through the vaporizer. See col. 3, lines 44-48. Thus, given the advantage of controlling the flow rate, as taught by Ellzy '323, it would have been obvious to one of ordinary skill in the art to modify the method of Stetter '348 by including an inert carrier gas to regulate the rate of flow of the sample material through the vapor delivery line. With regard to claims 14 and 15, Stetter '348 discloses feeding the sample through the vapor delivery line at a rate of about 10mL-500mL per minute. See col. 10, lines 20-21. Therefore, for the reasons set forth above, Applicant's claimed invention is deemed to be obvious, within the meaning of 35 USC 013, over Stetter '348 in view of Ellzy '323.

8. Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stetter '348 in view of USP 4,781,798 to Gough (herein referred to as "Gough '798").

Stetter '348 fails to teach that the sensor is coated with a block dimethylsiloxane-carbonate copolymer.

Gough '798 teach that poly(dimethylsiloxane-carbonate) copolymers have good optical properties. See col. 4, lines 59-64. It would have been obvious to one of ordinary skill in the art to modify the optical sensors disclosed in Stetter '348 by coating them with a poly(dimethylsiloxane-carbonate) copolymers to derive better optical properties, as taught in Gough '798. Therefore, for the reason set forth above, Applicant's claimed invention is deemed to be obvious, within the meaning of 35 USC 103, over Stetter '348 in view of Gough '798.

9. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stetter '348 in view of USP 5,563,341 to Fenner et al. (herein referred to as "Fenner et al. '341").

Stetter '348 fails to teach that the sensor is coated with a silicone polyimide. Fenner et al. '341 teach a sensor subjected to vapor pressure that is coated with polyimide. See col. 3, lines 44-47. The polyimide is stated to improve the repeatability of the sensor to detect constituents in vapor atmospheres. See col. 10-39. Thus, it would have been obvious to one of ordinary skill in the art to modify the sensor method of Stetter '348 by coating the sensor with a polyimide to improve the accuracy of the sensor device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique T. Cole whose telephone number is 703-305-0447. The examiner can normally be reached on Monday-Thursday from 6:30 A.M. to 4:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 703-308-4037. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-5408 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0661.

Monique T. Cole
Examiner
Art Unit 1743

MC MC
April 18, 2002

Jill Warden
Supervisory Patent Examiner
Technology Center 1700